

CLAIMS

I Claim:

1. A method of providing multiple-source resource management of a compute environment, the method comprising
 - defining a resource management interface;
 - identifying a location of each of a plurality of resource managers within the compute environment;
 - determining a set of services available from each of the plurality of resource managers;
 - selecting a group of services available from the plurality of resource managers;
 - contacting the group of resource managers to obtain full information associated with the compute environment; and
 - integrating the obtained full information into a single cohesive world-view of compute resources and workload requests.
2. The method of claim 1, further comprising performing tasks based the obtained world-view of compute resources using the group of services.
3. The method of claim 2, wherein performing tasks is further based on policies.
4. The method of claim 1, further comprising ignoring any data obtained from the plurality of resource managers.
5. The method of claim 1, further comprising overwriting any data obtained from the plurality of resource managers.
6. The method of claim 1, further comprising performing arbitrary operations on data when integrating the full information into a world-view.
7. The method of claim 1, wherein identifying a location of each of the plurality of resource managers further comprises determining where each resource manager is and how to communicate with each resource manager.
8. The method of claim 1, wherein determining the set of services available from each of the plurality of resource managers comprises one of: explicitly receiving from a file the services and/or

data available, implicitly determining the services available and dynamically determining the services available.

9. The method of claim 1, further comprising defining a type for each of the plurality of resource managers, wherein determining the set of services available from each of the plurality of resource managers is implied based on the type associated with each resource manager.
10. The method of claim 1, further comprising scheduling and managing the compute resources using the world-view.
11. The method of claim 1, wherein the full information comprises compute resources state information.
12. The method of claim 1, wherein the method is practiced by a scheduler.
13. The method of claim 1, wherein the compute environment relates to at least one of a local area grid, a cluster environment, a data center, a wide area grid, a cluster scheduler utility-based computing environment and hosted computing centers.
14. The method of claim 1, wherein contacting the group of resource managers further comprises contacting a plurality of single-resource-type resource managers, including, but not limited, a software manager, a network manager, license manager, a data storage manager and a compute resource manager.
15. A computer module for providing multiple-resource management of a cluster environment, the computer module comprising:
 - means for defining a resource management interface;
 - means for identifying a location of a plurality of services within the cluster environment;
 - means for defining a type for each of the plurality of services;
 - means for selecting a group of services from the plurality of services;
 - means for contacting the group of services to schedule and manage the cluster environment;and
 - means for integrating the obtained full information into a single cohesive world-view of compute resources and workload requests.

16. The computer module of claim 15, further comprising means for performing tasks based on the obtained world-view of cluster resources using the group of services.
17. The computer module of claim 15, wherein the computer module is a workload manager.
18. The workload manager of claim 17, wherein the group of services that schedule and manage the cluster environment is at least a cluster scheduler.
19. A computer-readable media containing instructions for controlling a computing device to provide multiple-resource management of a cluster environment, the instructions comprising:
 - defining a resource management interface;
 - identifying a location of each of a plurality of resource managers within the compute environment;
 - determining a set of services available from each of the plurality of resource managers;
 - selecting a group of services available from the plurality of resource managers;
 - contacting the group of resource managers to obtain full information associated with the compute environment; and
 - integrating the obtained full information into a single cohesive world-view of compute resources and workload requests.
20. The computer-readable media of claim 19, wherein the instructions further comprise performing tasks based on cluster policies and the obtained world-view of cluster resources.
21. A system for providing multiple-source resource management of a compute environment, the system comprising
 - a module configured to define a resource management interface;
 - a module configured to identify a location of each of a plurality of resource managers within the compute environment;
 - a module configured to determine a set of services available from each of the plurality of resource managers;
 - a module configured to select a group of services available from the plurality of resource managers;
 - a module configured to contact the group of resource managers to obtain full information associated with the compute environment; and
 - a module configured to integrate the obtained full information into a single cohesive world-view of compute resources and workload requests.

22. The system of claim 20, further comprising a module configured to perform tasks based the obtained world-view of compute resources using the group of services.
23. The system of claim 22, wherein the module configured to perform tasks performs the tasks based on policies.
24. The system of claim 21, further comprising a module configured to ignore any data obtained from the plurality of resource managers.
25. The system of claim 21, further comprising a module configured to overwrite any data obtained from the plurality of resource managers.
26. The system of claim 21, further comprising a module configured to perform arbitrary operations on data when integrating the full information into a world-view.
27. The system of claim 21, wherein the module configured to identify a location of each of the plurality of resource managers further determines where each resource manager is and how to communicate with each resource manager.
28. The system of claim 21, wherein the module configured to determine the set of services available from each of the plurality of resource managers further explicitly receives from a file the services and/or data available, implicitly determines the services available or dynamically determines the services available.
29. The system of claim 21, further comprising a module configured to define a type for each of the plurality of resource managers, wherein determining the set of services available from each of the plurality of resource managers is implied based on the type associated with each resource manager.
30. The system of claim 21, further comprising a module configured to schedule and managing the compute resources using the world-view.
31. The system of claim 21, wherein the full information comprises compute resources state information.

32. The system of claim 21, wherein the compute environment relates to at least one of a local area grid, a cluster environment, a data center, a wide area grid, a cluster scheduler utility-based computing environment and hosted computing centers.

33. The system of claim 21, wherein the module configured to contact the group of resource managers further contacts a plurality of single-resource-type resource managers, including, but not limited, a software manager, a network manager, license manager, a data storage manager and a compute resource manager.